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Tourism for tomorrow: sustainable strategies to empower rural economies

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Abstract
The transformational effect of tourism as a catalyst for sustainable rural development is examined in Tourism for Tomorrow: Sustainable Strategies to Empower Rural Economies. Tourism provides a means of rejuvenation as rural areas across the globe struggle with issues including depopulation, economic stagnation, and cultural decay. In order to ensure active community engagement, this article looks at sustainable tourism initiatives that support cultural preservation, environmental stewardship, and economic diversification. The report highlights best practices and policy suggestions for incorporating tourism into rural development agendas by referencing theoretical frameworks and international case studies.Community-based tourism, digital innovation, capacity-building, and resilience planning are prioritized, especially in the aftermath of global shocks like the COVID-19 pandemic. The results highlight how crucial it is to approach rural tourism holistically, inclusively, and contextually in order to adhere to sustainability and long-term effect principles.

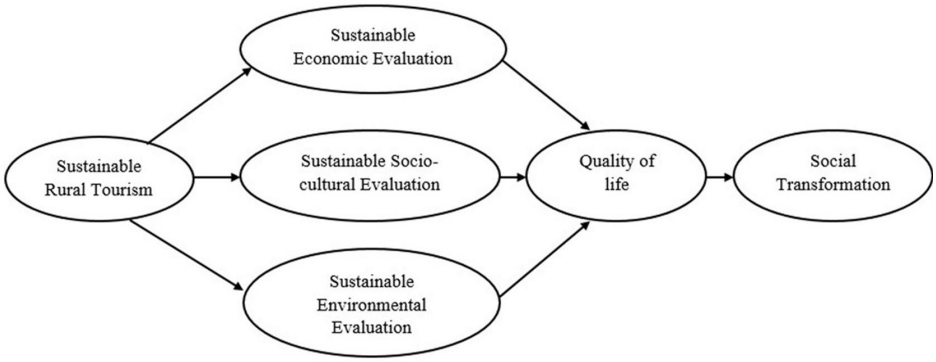
Keywords: Sustainable tourism; rural development; community empowerment; economic resilience; cultural preservation; rural economies; community-based tourism; tourism strategies; sustainable development; COVID-19 recovery.

Introduction
These might include a traveler's passions, worldly curiosity, cultural or recreational attractions, travel resources, infrastructure, technological opportunities, or a destination that is defined as a particular region or kind of terrain. These days, rural tourism is one of the most well-liked types that incorporates some of these elements. This kind of tourism has seen especially rapid growth in recent decades, which is linked to changes in the rural environment and economics. However, it is fulfilling when such tourism growth adheres to sustainable development ideals [1].These are crucial for both the potential for a kind of tourism that reduces its detrimental effects on the natural and social settings, as well as for the preservation of the ecosystem in which tourism functions. Numerous studies show that rural tourism is growing in significance globally and is seen as a kind of auxiliary approach for rural regions' sustainable development. Through the idea of sustainability, rural tourism specifically highlights the involvement of locals and the responsibility of visitors who utilize its resources, while also concentrating on the preservation of natural and cultural environmental resources.Numerous scholars have identified the key, or one of the key, roles in the growth of sustainable rural tourism.

One of the primary economic drivers in rural communities in recent years, if not decades, has been tourism. It has the potential to unquestionably provide new revenue streams and job opportunities, and it seems to be essential to the long-term viability of rural communities that draw tourists. As a diversification or adaptation strategy, rural tourism may be utilized to enhance current livelihoods and increase locals' capacity to secure income, so lowering the danger of economic decline.But without the participation of the local population, this will not happen. A movement in the local economy toward tourism to enhance lives is virtually inevitable as long as the local population is becoming more and more aware of how tourism may help them generate extra income or even riches. It may also serve as a revitalizing tool [2].

Figure 1: Using sustainable rural tourism to alter society

In addition to reducing the negative effects of tourism, modern approaches to the industry also consider the long-term sustainability of high-quality natural and social resources, visitor satisfaction, the quality of life of communities that receive tourism, and the prudent use of



natural and social resources within the framework of sustainable tourism development.One of the sectors most severely impacted by the COVID-19 epidemic in 2020 was the tourist sector. In addition to being a significant economic sector that significantly affects the GDP of a country, it also serves as a strong source of jobs, giving many residents in villages that are losing population a place to live.

The study focuses on Poland's rural areas, which are defined as regions beyond the city's administrative borders and include both rural communes and rural portions of urban-rural communes. All locations outside of urban clusters are considered "rural areas" by EUROSTAT. "Urban clusters" are groups of one-kilometer continuous grid cells having a minimum population of 5000 and a density of at least 300 people per km2. Using the IDs from the National Official Register of the Territorial Division of the Country (TERYT), statistical surveys in Poland are classified according to the country's territorial division [3]. In 2020, 29.0 million hectares, or 92.9% of Poland, were rural, according to statistics from the Central Office of Geodesy and Cartography. There were 642 urban-rural communes and 1533 rural communes in 2020; the majority of these communes (37.8%) had less than 5000 residents. As of July 31, 2020, there were 30,690 beds (39.6% of the total) in 4700 tourist accommodations in rural regions, which accounted for 45.6% of all such facilities.The number of facilities and beds in rural regions have grown by 61.9% and 29.7%, respectively, since 2010.

In rural regions, sustainable tourism is sometimes boiled down to small-scale enterprises, local cuisine and crafts, transportation, and farms that accommodate visitors. The necessity for environment protection almost usually coexists with the growth of rural tourism, which prioritizes a sustainable approach. Its disappearance may have an impact on the local community's future standard of living as well as the available tourist goods. The goal of sustainable tourism, which includes that which is practiced in rural areas, is to preserve natural and cultural resources while highlighting the responsibility of visitors and the need of local community involvement.

Table1:An overview of the respondents' characteristics

Issues	1	2	3	4	5
Gender	Male (40.9%)	Female (39.1%)			
Age	18-30 (34.2%)	31-40 (25.3%)	41-50 (56.7%)	51-60 (7.8%)	61<(1%)
Levelof Education	NoLiterate (1.2%)	Primary School (27.2%)	High School (38.7%)	College (18.4%)	Graduate or above (4.5%)
Occupations	Farmer/Agri relatedjob (83.3%)	Tourism relatedjob (27.3%)	Business (84.7%)	Government/ private job(3.5%)	Others (8.2%)

It is evident that rural tourism has several facets, both in terms of the tourism product provided and in relation to agricultural operations. Other types of tourism that Bramwell and Lane highlight include ecotourism, nature tourism, exploratory tourism, sports tourism, health tourism, and other active tourist activities like hiking, mountain biking, horseback riding, fishing, etc. They also highlight heritage-related tourism, including folk and ethnic tourism, cultural and traditional tourism, and educational tourism. Numerous scholars highlight the connection between rural environments and tourism. So far, writing on the issue has stressed the tiny extent of the rural tourist sector and few have observed that it is not simply seasonal tourism but all year round.Since the shutdown, when this market's superb organization was seen, this kind of tourist has been especially valued. It is a tiny but well-managed market that often has significant instructional value, as Roberts et al. had previously highlighted twenty years before. Therefore, appropriate policies and effective administration are essential in promoting rural tourism [4]. The development of rural regions is crucial in the EU.

Regarding the future of rural areas, Cork Declarations 1.0 and 2.0 outline the primary policy objectives to combat poverty in rural areas, reverse rural migration, boost employment, and, lastly, satisfy the demand for quality, safety, health, and personal development in order to improve the quality of the rural environment.Going even beyond, Declaration 2.0 promotes the development of rural prosperity with a focus on innovation, investment, and entrepreneurship. It highlights the need of funding their vitality, which would include eradicating digital exclusion. Protecting the environment is a major need, and this should be reflected in the growth of the

local economy, eco-friendly tourism, and, more generally, rural leisure. The contributions of rural tourism that is, what rural tourism does to help create something or make it better or more successful are the main emphasis of this research. More precisely, since these objectives and paths diverge, we concentrate on the contributions of rural tourism rather than its sustainability.Rural tourism now directly offers visitors special services and chances to get in touch with other business channels in response to the emerging demand patterns of short-term travelers.

Why should rural areas focus on development based on tourism? What advantages may a rural community get from rural tourism, especially during and after the COVID pandemic? Policymakers may decide not to provide scarce resources to such programs if they do not have a clear image and answers to these issues. To assist government and community planners determine if rural tourist growth is advantageous, it is essential to comprehend how rural tourism contributes to rural community development.The balance between rural development and any negative effects must be taken into account because policymakers understand that improving rural resilience and decreasing rural vulnerability are difficult but vital tasks. Economic development, for instance, may raise the well-being index and improve people's quality of life. However, it may exacerbate environmental pollution, raise the demand for green spaces, and aggravate wealth disparity. These changes might make it harder to preserve nature in rural areas and add stress to the lives of locals. This might make policymakers wonder whether they should encourage rural development centered on tourism [6]. Therefore, it is essential to provide policymakers particular information on the contributions of rural tourism.

Literature review

El Archi et al. (2023) [1] This study conducts a systematic literature review on smart tourism destinations (STDs) within the framework of sustainable development. The authors analyzed a wide range of scholarly articles to identify how STDs integrate smart technologies (e.g., IoT, AI, big data) with sustainability goals across economic, environmental, and social dimensions. Key findings reveal a growing emphasis on technological innovation to enhance tourist experiences, optimize resource use, and promote environmental consciousness. However, the study also notes a gap in aligning technological advancement with inclusive and participatory governance, urging future research to focus on integrating stakeholder engagement and long-term strategic planning in smart tourism initiatives.

Ottaviani et al. (2023) [2] Ottaviani and colleagues focus on the integration of participatory approaches in heritage-based tourism planning, emphasizing the four pillars of sustainability: economic, environmental, social, and cultural. The paper highlights how involving local communities and stakeholders in decision-making can enhance both the resilience and sustainability of tourism projects. The authors review various participatory planning tools and methodologies, evaluating their adaptability to different regional contexts. The study suggests that multi-stakeholder engagement, transparency, and local empowerment are key to preserving cultural heritage while fostering sustainable tourism development. Moreover, the authors advocate for adaptive planning frameworks that can respond to evolving local needs and sustainability challenges.

Utami et al. (2023) [3] This study investigates the critical success factors that drive rural tourism entrepreneurship in the context of sustainable tourism villages in Indonesia. The authors use qualitative and quantitative methods to identify how elements such as local leadership, community participation, entrepreneurial skills, infrastructure, and supportive government policies contribute to sustainable tourism outcomes. Emphasis is placed on the importance of capacity building and fostering local innovation to maintain cultural and environmental integrity. The findings underscore that successful rural tourism depends not only on natural or cultural attractions but also on strategic entrepreneurial management and collaborative governance models.

Zawadka et al. (2022) [4] This research examines the socio-economic factors affecting the operation and safety of agritourism farm stays in Poland during the COVID-19 pandemic. The authors explore how variables such as farm size, location, host experience, and health safety measures influenced both tourist demand and host responses during the health crisis. Results show that farms with higher adaptability, digital presence, and effective safety protocols were better able to maintain operations. The study contributes to sustainability discourse by highlighting the resilience of agritourism in the face of global disruptions and provides insights into future planning for crisis-resilient rural tourism.

Vergani et al. (2022) [5] This study uses the Delphi method to reach a consensus among international experts regarding the return-to-play (RTP) process for athletes suffering from long-standing adductor-related groin pain. The researchers focused on defining clinical criteria, functional assessments, and progression guidelines for a safe return to sports. Key findings emphasize a multi-dimensional RTP approach, including pain monitoring, functional performance, and communication among medical staff and athletes. Though not directly linked to tourism, this study is methodologically significant in contexts involving expert consensus building, which can be applied to policy or strategic planning in tourism and sports development.

Vaishar & Šťastná (2022) [6] This paper presents an early analysis of the COVID-19 pandemic's impact on rural tourism in Czechia, focusing on changing tourist behavior and mobility patterns. The authors highlight that, during the pandemic, rural destinations experienced a relative increase in demand, as domestic tourists preferred less crowded, nature-based locations over urban centers. The study identifies opportunities for rural tourism development in response to changing preferences but also warns about infrastructural and capacity limitations in rural areas. The findings support the idea that rural tourism can be a resilient alternative in crisis contexts, emphasizing the need for strategic support and sustainable planning.

Ram et al. (2022) [7] This study examines whether COVID-19 vaccination influenced people's intentions to travel, using a three-wave cross-sectional survey design. Conducted in Israel, the research tracks changes in attitudes and behaviors before and after the vaccine rollout. Findings reveal a positive psychological effect of vaccination on perceived safety and willingness to resume travel, even in the absence of policy changes. The authors emphasize the psychosocial dimension of tourism recovery, highlighting that perceptions of health security play a crucial role in revitalizing the tourism industry. The study contributes valuable insight into tourist behavior

post-pandemic, suggesting that public health interventions can stimulate tourism demand through restored confidence.

Marques et al. (2022) [8] This article analyzes the resilience and recovery of rural tourism in Portugal between the first and second waves of COVID-19. It discusses how rural destinations experienced a temporary boost in visitation as travelers sought safe, less crowded environments. The authors explore key enablers for rural tourism recovery, such as flexible accommodation models, strong domestic demand, and the natural appeal of rural areas. However, challenges like limited infrastructure and economic fragility in rural communities remain. The study concludes that while rural tourism showed short-term resilience, long-term recovery will depend on strategic investments and support mechanisms tailored to rural contexts.

Lin (2022) [9] Lin's study presents a comprehensive evaluation of urban sustainable development strategies, focusing on the involvement of multiple stakeholders such as governments, businesses, and civil society. The research employs multi-criteria decision-making models to assess how different urban sustainability strategies align with stakeholder interests. It identifies common strategic paths that are adaptable across different urban contexts, particularly in areas like transportation, energy efficiency, green spaces, and housing policies. Lin argues for the integration of stakeholder-specific needs and cross-sector collaboration as essential to achieving long-term urban sustainability. This research contributes to planning frameworks that balance environmental goals with social and economic inclusion.

Martí Riera et al. (2022) [10] This technical report is part of a pilot-focused research deliverable that outlines the extraction of requirements and definition of Key Performance Indicators (KPIs) for project pilots, most likely within the context of urban development or smart systems initiatives. Though not a peer-reviewed article, the deliverable provides structured methodologies for aligning project objectives with measurable outcomes, focusing on practical implementation. It is particularly useful for project managers, policy makers, and researchers working on pilot projects involving sustainability, urban innovation, or digital transformation. The inclusion of KPI frameworks makes it relevant for performance monitoring and impact evaluation, which are critical in sustainable development projects.

Ahonen et al. (2022) [11] This study assesses the impact of smart mobility pilot projects in Finland in terms of their contribution to sustainability goals. It focuses on pilot implementations across urban and rural environments, analyzing the extent to which these initiatives promote environmentally friendly, socially inclusive, and economically viable transportation systems. The researchers used a framework combining qualitative and quantitative methods to evaluate outcomes, highlighting the importance of policy alignment, public engagement, and technological readiness. The study concludes that while some pilots show promise, the overall contribution to sustainability is still limited due to scalability issues and lack of long-term integration.

Yang et al. (2021) [12] This research investigates how rural revitalization strategies influence the development of rural tourism in China. Using empirical data and econometric analysis, the

authors find that infrastructure development, environmental restoration, and cultural heritage preservation significantly enhance rural tourism attractiveness and economic performance. The study emphasizes the interdependence between tourism growth and broader socio-economic policies, suggesting that effective rural revitalization fosters sustainable tourism by improving quality of life for residents and enhancing tourist experiences. The paper contributes to the literature by quantifying the policy impacts on tourism-related outcomes and offering policy recommendations for integrated rural development.

Polukhina et al. (2021) [13] This study explores how the COVID-19 pandemic reshaped the paradigm of sustainable rural tourism in Russia. The authors argue that the crisis served as both a challenge and an opportunity for the rural tourism sector. Using empirical evidence from Russia, the study identifies key changes in demand patterns, tourist behavior, and local business strategies during the pandemic. The authors propose a refined concept of sustainable rural tourism that emphasizes resilience, local community involvement, digital transformation, and health-related concerns. A major contribution of the paper is its call for adaptive management frameworks that integrate risk management into sustainability planning, ensuring that rural tourism can not only recover but also become more robust in the face of future crises.

Ma et al. (2021) [14] This research investigates how cultural factors impact the sustainability of rural household livelihoods within tourism destinations in China. The authors use a mixed-method approach, incorporating household surveys and interviews to assess the role of local cultural identity, traditional knowledge, and value systems in shaping tourism development and livelihood outcomes. They argue that culture is not merely a backdrop for tourism but a dynamic force that affects how households perceive opportunities, engage in tourism-related activities, and adapt to socio-economic changes. Their findings highlight the importance of integrating cultural sustainability into rural tourism policies, suggesting that ignoring cultural dimensions can undermine both community well-being and long-term tourism success.

Li et al. (2021) [15] examine the contrasting impacts of the COVID-19 pandemic on urban and rural tourism sectors in China. The study highlights how rural areas, due to their lower population density and perceived safety, became more attractive for domestic tourists during the pandemic. The authors analyze various recovery strategies implemented by tourism stakeholders, including digital marketing, health safety measures, and product diversification. One of the key findings is that rural tourism demonstrated greater adaptability and resilience compared to urban tourism. The paper underscores the need for differentiated policy support and recovery planning that considers the unique characteristics and vulnerabilities of urban and rural destinations.

López-Sanz et al. (2021) [16] focus on the role of rural tourism as a strategic tool for promoting sustainable development in depopulated regions. Using case studies and spatial analysis from Spain, the authors demonstrate how rural tourism initiatives can help revitalize local economies, preserve cultural heritage, and mitigate demographic decline. However, they also caution against the over-commercialization of tourism, emphasizing the importance of sustainable planning and community participation. The study provides a framework for assessing the sustainability of

rural tourism projects based on economic, social, and environmental indicators, offering practical implications for policymakers and rural development planners.

Belur et al. (2021) [17] investigate the often-overlooked issue of interrater reliability in the context of systematic reviews, a cornerstone of evidence-based research. The study examines how variations in coder interpretation and decision-making can affect the consistency and credibility of systematic review outcomes. Drawing on real-world examples and empirical data, the authors highlight discrepancies in how different reviewers assess inclusion criteria, extract data, and categorize findings. The paper underscores the importance of clear coding guidelines, comprehensive coder training, and transparent documentation to reduce bias and improve reliability. This work is particularly significant for researchers conducting literature reviews across disciplines, including tourism and social sciences, where methodological rigor is essential.

Dennis et al. (2021) [18] explore the intersection of health anxiety, contamination fears, and the psychological impact of the COVID-19 pandemic. Building on cognitive-behavioral models and lessons from previous pandemics such as SARS and H1N1, the authors examine how individuals with heightened anxiety are particularly vulnerable during public health crises. The paper discusses the rise in obsessive-compulsive behaviors, fear-driven avoidance, and stress-related disorders linked to the pandemic. Although not focused on tourism, the findings have broad implications for tourism behavior and recovery strategies—particularly in understanding traveler risk perceptions, mental health concerns, and the importance of clear health communication. This work informs both mental health practitioners and tourism planners in navigating post-pandemic challenges.

Ryu et al. (2020) [19] focus on the significance of resident participation in rural tourism projects, using the village of Kumbalangi in Kerala, India, as a case study. The paper examines how endogenous (internally driven) tourism development can be more sustainable and beneficial when local communities are actively involved in decision-making and operations. Through qualitative analysis, the study reveals that community empowerment, shared ownership, and cultural authenticity play key roles in fostering sustainable tourism. It emphasizes the importance of grassroots-level participation and the need for policies that support community-led initiatives. The findings provide practical implications for destination planners aiming to implement inclusive and sustainable rural tourism models.

An and Alarcon (2020) [20] provide a comprehensive systematic review of the factors influencing the sustainability of rural tourism. By examining a broad range of studies, they identify key themes related to environmental protection, economic viability, socio-cultural preservation, and stakeholder involvement. The review highlights the importance of integrating community interests, policy support, and environmental stewardship in tourism planning. The authors also note significant research gaps in long-term sustainability assessments and call for interdisciplinary approaches to address these. Their work contributes valuable insights into the theoretical and practical foundations of sustainable rural tourism and serves as a guide for future research and policy development.

Research methodology

Numerous data sources may be utilized, including literature reviews, judgments on the theoretical definition of the construct, previous theoretical and empirical research on the targeted construct, advice from subject-matter experts, interviews, and focus groups [7]. The first step in our inquiry was to get data via a rigorous literature review. The second step included assessing the components that were omitted in order to develop questions that fully captured all important aspects of the target construct domain. In this case, researchers are unable to exclude any necessary measurements or fail to include all of the important components of the construct. Additionally, the CMB stimuli such as double-barreled things, items with unclear or unfamiliar terminology, and items with complex syntax should be made clearer, more precise, and shorter. That is, objects tainted by CMB should be removed by researchers. In order to decrease the degree to which the items accessed ideas beyond the focus construct domain and preserve the variances pertinent to the construct of interest, the third phase included examining construct-irrelevant variation. Variances unrelated to the intended concept have to be eliminated [8]. To make sure that the evaluations weren't influenced by outliers, the fourth stage was looking at intergroup consistency. In order to guarantee rating conformance, the fifth stage included assessing interexpert dependability.Lastly, we used the fuzzy analytic hierarchy process (AHP), a multicriteria decision-making method, to rank the significance of each variable. Every technique used in this research is based on professional opinion.

Selection of experts

A few traits are crucial for selecting specialists since this research examines how rural tourism contributes to the development of rural communities, which includes phenomena in the postdevelopment stage. (1) The number of experts, (2) expertise, (3) knowledge, (4) diversity, (5) years of experience in this subject, and 5) dedication to participation were the factors utilized to select the experts in this research. According to Murphy-Black et al., the more experts there are, the better, as a larger number lessens the impact of rater bias and expert attrition [9]. According to Taylor-Powell, the number of participants in an expert-based study is contingent upon the target population's variety as well as the goal of the study.For such a reason, Okoli and Pawlowski suggested a target number of 10–18 specialists. As a result, we selected a panel of 18 experts based on their professed interest in the subject and asked them to provide feedback on our reasoning for the item ranking priority. For every item we gave them, we asked them to indicate how much they agreed or disagreed with it. In order to prevent rater bias from influencing our research, we used a diverse and anonymous setup. The 18 experts' diverse experiences may have facilitated their ability to come to an unbiased conclusion.

Creating objects to symbolize the construct

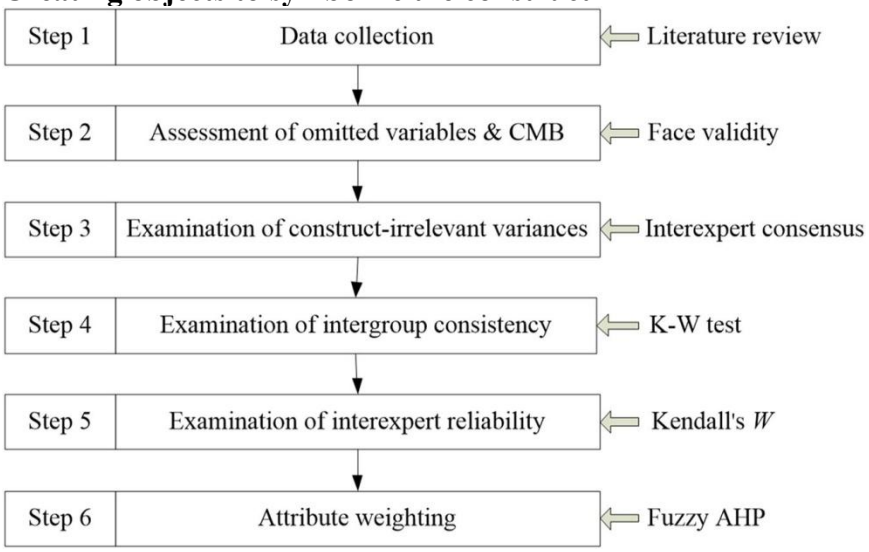


Figure2:process for developing a model. Procedures needed to create the model for analysis after data collection

Step 1: Data collection

Data gathering represents the construct of interest and offers proof for further research. Although it is necessary to understand the contributions made by rural tourism, prior research has not offered any proof to support the establishment of a rural community plan by policymakers; thus, a second source is necessary to accomplish this goal. For some subjects, we conducted a literature study; the information we utilized was derived from articles on rural tourism that were included in the SCIE (Science Citation Index Expanded) and SSCI (Social Sciences Citation Index). The purpose of this research was to investigate the function of rural tourism and how it aids in rural development [10].

Step 2: Analyze the CMB and missing variables' face validity.

Assessing if a measuring scale or questionnaire has all the required items is known as face validity (Dempsey and Dempsey). We created data subattributes from our literature research based on the first step. However, it's possible that additional important qualities or subqualities were overlooked or left out. Thus, we had two goals in mind when we looked at face validity. We started by evaluating the omitted variables, which are the existence of important or overlooked components [11]. These pose a risk to construct validity that might lead to faulty results if researchers neglect it. Stated differently, face validity is used to determine if the researchers have sufficiently captured all aspects of the relevant notion. Otherwise, the model or assessment tool is flawed.The majority of rural tourism research, the authors discovered, have not examined the problem of omitted variables.

Step 3: Look for construct-irrelevant differences in the interexpert consensus.

We have to exclude items unrelated to the construct of interest after assessing face validity, or else the results would be deemed invalid. To do this, we looked at the interexpert consensus. Estimating the experts' evaluations of each item was the goal. Stated differently, interexpert

consensus evaluates how closely experts agree on evaluations (Kozlowski and Hattrup). Descriptive statistics have been employed extensively in previous research to assess the degree of consensus and to capture the heterogeneity among individual features, answers, or contributions to the subject group (Roberson et al., many expert-based studies).When assessing consensus, two primary categories of descriptive statistics are often employed: amount of dispersion (standard deviation, interquartile, and coefficient of variation) and central tendency (mode, mean, and median).

Step 4: Assess consistency across groups

The sample size in this expert-based research was modest. We wanted to investigate the impact of rater bias on intergroup consistency since any bias may have led to inconsistency among the expert subgroups. The aggregated results were unfounded when the intergroup evaluations had significantly differing distributions. According to Dajani et al., interexpert agreement is useless if a study's replies are inconsistent since this might lead to rater bias distorting the median, SD, or CV. To ascertain if there is a significant difference between the predicted and actual frequency in three or more categories, the majority of research have used one-way ANOVA [12]. Nonetheless, this approach relies on a normal distribution and a high sample size.Expert-based studies often have a limited expert sample size and a skewed evaluation distribution. Therefore, for consistency measurement Potvin and Roff, we used the nonparametric test rather than the one-way ANOVA. We tested the intergroup consistency between the three expert subgroups using the Kruskal-Wallis test (K-W).

Step 5: Assess the dependability of interexperts

According to James et al., interexpert dependability is often described as the ratio of systematic variation to overall rating variance. However, the precise or absolute value of evaluations is not a problem of interexpert dependability estimate. Instead, it calculates the relative ranking or ordering of the scored items. Therefore, the consistency of evaluations is a worry of interexpert dependability estimate (Tinsley and Weiss). We cannot trust the analysis of an expert-based research if interexpert dependability is not achieved (Singletary). Therefore, in this expert-based research, we looked at interexpert dependability. Although there are several approaches to assessing interexpert dependability in the literature, there doesn't seem to be much agreement on a single approach [13].Since Kendall's W could be used to any sample size or ordinal number, we utilized it to evaluate the experts' dependability for each sample group (Goetz et al). Every expert was in agreement and had given the list of items or issues the same order if W was 1. Reliabilities much above the stated threshold of.70 signify adequate internal dependability, as proposed by Spector et al. and Schilling.

Step 6: Analyze the process of fuzzy analytic hierarchy

We determined that the aggregated items were genuine, relevant, and reliable in connection to the construct of interest after looking at face validity, interexpert consensus, intergroup consistency, and interexpert reliability. We used a multicriteria decision-making approach to evaluate each feature and subattribute, giving policymakers a clear indication of which contributions are more or less essential. One popular decision-making approach for modeling unstructured issues is fuzzy AHP. Based on scores, it allows decision-makers to represent a

complicated problem in a hierarchical framework that shows the connections between the objective, criteria, and subcriteria (Park and Yoon). According to Mikhailov and Tsvetinov, the fuzzy AHP approach accepts ambiguity and vagueness [14].Stated differently, fuzzy AHP may accurately represent how humans evaluate ambiguity in complicated, multicriteria decision-making issues (Erensal et al.). In this work, we developed the influence structure of rural tourism on sustainable rural development, determined weights, and performed fuzzy AHP using Power Choice 2.5 software.

Result analysis

We gave all of the experts an explanation of the significance of the missing variables, the CMB stimuli, and the two goals of face validity examination. The 18 experts mentioned business viability as an omitted variable in their comments [15]. Our proposed questionnaire received no changes from the experts. According to these findings, one variable that had been hidden was exposed, and our created questionnaire was easy to read and comprehend. The construct of interest was represented by the 34 subattributes that were first pooled, and every measurement tool was defendable in terms of CMB. The lack of method variance biasing effects suggested that the harm posed by CMB was minimal.

Interexpert consensus

We eliminated everything that wasn't related to the construct of interest in this stage. The measuring of consensus was crucial in combining the opinions of the specialists. The AGR, median, SD, and CV were assessed in this investigation. We discarded two options that had ratings below 70%: carbon neutrality (AGR = 56%) and strategic alliance (AGR = 50%). Table 1 displays these findings. For the other 32 subattributes, the majority of experts in this research consistently identified high values and came to a consensus since the AGR, median, SD, and CV values were all higher than the cutoff criteria [16]. As a result, the four qualities and thirty-two subattributes that were first recognized as determinants requiring more examination remained.

Table 2: One-Way ANOVA and Independent Sample "t" Test Results

Sl.No	ResidentsDemographic Variables	SignificantValue	Inferenceof Hypothesis
1.	Gender	.000(t=4.363)	Rejectnullhypothesis
2.	Age	.058(F=2.15)	Failtorejectnull hypothesis
3.	LevelofEducation	.001(F=3.82)	Rejectnullhypothesis
4.	Occupations	.001(F=3.63)	Rejectnullhypothesis
5.	MonthlyFamilyincome	.000(F=6.36)	Rejectnullhypothesis

In this research, we used the K-W test to evaluate intergroup differences for each subattribute, with scores based on a 5-point Likert scale. The K-W test produced significant findings for all 32

subattributes, according to the results; all three expert groups achieved consistency at $p > 0.05$. Intergroup consistency was attained as this result showed that neither an extreme value nor an outlier supported the ratings. Lastly, we used Kendall's W to gauge interexpert dependability. $W = 0.73$ represented the economic viewpoint, $W = 0.71$ marked the sociocultural perspective, $W = 0.71$ represented the environmental perspective, and $W = 0.72$ represented the leisure and educational perspective [17]. According to all subgroup experts, the ranking order and convergence of these four groups of W were very reliable, with all scores being ≥0.7.

The hierarchical framework

The study's findings show that there are four characteristics and thirty-two subattributes that rural tourism contributes to the development of rural communities. The economic viewpoint is weighted at $w = 0.387$ and includes nine subattributes. Furthermore, rural tourism has long been seen as a potential tool for the sociocultural advancement and revitalization of rural communities, especially those impacted by the loss of historic structures, agricultural festivals, and traditional rural activities. The sociocultural viewpoint is weighted at $w = 0.183$ and includes nine subattributes based on the anticipated advantages. Furthermore, rural tourism may grow locally and on farms, which makes it a major factor in preserving and improving environmental preservation and regeneration.

Thus, the influence of rural tourism on the pursuit of environmental goals may be ascertained from an environmental standpoint [18]. According to our findings, the environmental viewpoint has a weight of $w = 0.237$ and consists of seven subattributes. Additionally, the recreational and educational perspective shows how appealing rural tourism is from the standpoint of tourists and how they evaluate the worth and contributions of a place. These findings demonstrate that this viewpoint is weighted at $w = 0.189$ and has seven subattributes. This particular contribution model has a hierarchical structure with three levels. The scores for each criteria might explain the groups' priority order and show how important each trait is. In a nutshell, each metric in the Level 2 model has the following crucial sequence: Economic, environmental, recreational, and educational perspectives are followed by sociocultural and environmental perspectives.Our rural tourism contribution model is developed since 1978. AHP was used to construct the scores and rankings, which were supplied by 18 experts with three distinct backgrounds.
It first demonstrates that, especially during COVID-19, demand for rural tourism has skyrocketed. Second, it outlines four important viewpoints on the particular ways that rural tourism contributes to the development of rural communities and how these viewpoints impact the growth of rural tourism. Our results are in line with previous research. For instance, the literature on rural or peripheral tourism has placed a lot of emphasis on topography (Carson, al). Rural tourism has the potential to contribute in two ways to the local geographical setting. The first comes from the viewpoint of the surroundings.

Table 3: Views of respondents about the development of rural tourism

Sl. No.	NameoftheVariable	Mean**	Std. Deviation	Rank
	EconomicEvolution			

1	Ruraltourismactivitieshaveincreasedmy income	6.55	.735	2
2	Tourismimprovesemploymentsituationofrural women	6.31	.757	5
3	Tourismhascreatedjobsformanypeopleinmy village	6.56	.554	1
4	Tourismhasattractedmorebusinesstoour locality	6.32	.627	4
5	Tourismimprovesnew,engineeredresidential buildings and improving the condition of commercial uses such as shops in the village	5.23	1.340	11

The growth of rural tourism in a community raises awareness of environmental conservation and encourages the prudent use of natural resources. This result is consistent with Lee and Jan's findings. The second comes from the viewpoint of leisure and education. In addition to offering visitors geographical distinctiveness, a rural community's geographic setting creates experiences that are inherently serene, rich in senses, and evocative. These findings imply that visitors' experiences will probably be enhanced by rural tourism [19]. This result aligns with the findings of Kastenhoz et al. Third, there has been no evidence of interexpert dependability, intergroup consistency, or interexpert consensus, despite the fact that expert-based methodologies are quite beneficial for creating and evaluating underlying phenomena. Such evidence is presented in this paper.Fourth, this study demonstrates that rural tourism contributes to rural community development in four key ways: economically, socioculturally, environmentally, recreationally, and educationally. At Level 2, our findings reveal four important markers. The economic viewpoint is often considered the most significant indicator, with the sociocultural perspective, which is weighed as the least significant, coming in second and third, respectively, to the environmental, leisure, and educational perspectives. At Level 3, the 32 subindicators of the secondary determinants of contributions were identified and given varying weights. These findings suggest that in order to comprehend how rural tourism contributes to the development of rural communities, the qualities or subattributes with the highest weights play more crucial roles. These 32 subindicators may be used by policymakers to create plans or policies for the development of rural tourism.

Pointing out development paths that result in preservation of the area's natural and cultural ecosystems is an equally vital component. Because of their regional or supra-regional distinctiveness, resources will be conserved with the help of appropriate education, which also provides the local community with a means of growth that allows for the creation of new activities that allow visitors to remain in the area. The desire for sustainable development is also met by this strategy, which preserves the environment and local culture while making the area economically appealing to the local population. Local organizations, such as "Heather Land," support an asset that is only a tourist attraction if it is intact and conserved for future generations.Lastly, the dissemination of knowledge about tourist resources and, more generally,

the tourism operations of rural operators may also be considered a sustainable strategy to rural tourism. The growth of tourism, especially rural tourism, and the use of new technology are linked. In rural areas where tourism has grown, the function of this instrument has been recognized and valued. This kind of contact is acknowledged by both "Heather Land" and Educational Homesteads as the most efficient approach to meeting the possible receiver of their offer.

The operations of "Heather Land" are a prime example of these bottom-up initiatives, which are based on ongoing communication with the local community and sustainable resource usage, both of which are stressed in the organization's plan and other publications. The primary goal of creating a tourist offer is not to maximize financial gain, but to promote community integration, lessen exclusion by consistently engaging these groups in tourism and leisure activities, and decrease migration by showcasing new forms of economic activity, which avoids the need to leave the area.As part of a global trend, the initiatives of "Heather Land" and Educational Homesteads highlight the importance of women in developing and implementing the rural tourism industry [20]. Since small-scale, community-focused tourism projects have the best chance of improving the lives of economically vulnerable populations, especially rural women, many stress the need of participation and stress the significance of supporting them. The offer discussed in this article is a great illustration of a sustainable tourism strategy that relies on local social capital resources that aren't always valued in mass tourism, which often draws in foreign workers and multinational corporate tourist companies.

Conclusion

Rural economies might undergo significant change as a result of tourism, which presents chances for infrastructure development, revenue production, and cultural preservation. However, it runs the danger of overexploitation and societal unrest in the absence of sustainable methods. Rural tourism's future depends on a well-rounded strategy that places an emphasis on long-term economic sustainability, community participation, and environmental responsibility. In order to guarantee that tourism becomes a vehicle for inclusive development rather than displacement, local communities must be empowered via education, fair partnerships, and the promotion of real experiences. Investing in sustainable tourism is a commitment to maintaining the ecological and cultural integrity of rural places for future generations, not merely a financial choice.

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